

WARM-UP - Solve the system

$$\begin{cases} x + 2y + 3z = -6 \\ 2x - y = 2 \\ x + 3y = 8 \end{cases}$$

$$\begin{array}{l} 2x - y = 2 \rightarrow 2x - y = 2 \\ -2(x + 3y = 8) \quad \underline{-2x - 6y = -16} \\ \hline -7y = -14 \end{array}$$

$$\boxed{y = 2}$$

$$\begin{array}{l} 2x - 2 = 2 \\ \quad \quad \quad +2 \quad \quad +2 \\ 2x = 4 \\ \boxed{x = 2} \end{array}$$

$$2 + 2(2) + 3z = -6$$

$$\begin{array}{l} 6 + 3z = -6 \\ \quad \quad \quad -6 \quad \quad -6 \end{array}$$















$$3z = -12$$

$$\boxed{z = -4}$$

Warmup:

1. The person eating ice cream lives in the brown house.
2. The person playing Basketball lives to the right of the pink house.
- ~~3. The person playing Volleyball lives in the magenta house.~~
4. The person eating waffles lives directly to the right of the brown house.

So, who lives in what house? And what do they eat?

Houses		 1	 2	 3
Color:	brown			
	magenta			
	pink			
Food:	waffles			
	spaghetties			
	ice cream			
Sport:	Basketball			
	Volleyball			
	Rugby			

due
Wed.
Nov. 10

Solving Systems of 3 variables (Elimination)

$$\textcircled{1} \quad x - 3y + 3z = -4$$

$$\textcircled{2} \quad 2x + 3y - z = 15$$

$$\textcircled{3} \quad 4x - 3y - z = 19$$

STEP 1: Pair equations to eliminate y (b/c it looks easy)

$$\textcircled{1} \quad x - \cancel{3y} + 3z = -4$$

$$\textcircled{2} \quad 2x + \cancel{3y} - z = 15$$

$$\textcircled{2} \quad 2x + \cancel{3y} - z = 15$$

$$\textcircled{3} \quad 4x - \cancel{3y} - z = 19$$

$$\textcircled{4} \quad 3x + 2z = 11$$

$$\textcircled{5} \quad 6x - 2z = 34$$

STEP 2: Write 2 new equations & solve for x, z .

$$\textcircled{4} \quad 3x + \cancel{2z} = 11$$

$$\textcircled{5} \quad 6x - \cancel{2z} = 34$$

$$9x = 45$$

$$\boxed{x = 5}$$

$$3(5) + 2z = 11$$

$$15 + 2z = 11$$

$$-15 \quad -15$$

$$2z = -4$$

$$\boxed{z = -2}$$

STEP 3: Substitute x & z into one of the original equations

$$\textcircled{1} \quad 5 - 3y + 3(-2) = -4$$

$$-3y - 1 = -4$$

$$+1 \quad +1$$

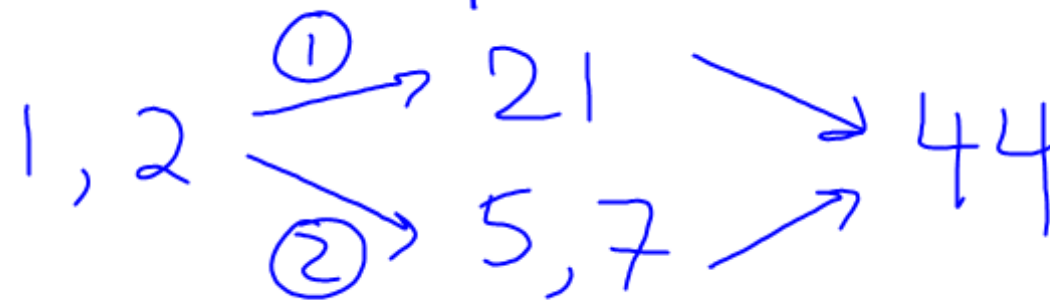
$$-3y = -3$$

$$\boxed{y = 1}$$

$$(x, y, z) = (5, 1, -2)$$

STEP 4: CHECK!

HW: Sect. 3.6 (p.157)



① I got this!

② Err, sorta!

Ext. Prob.
due
Wed.
next week
Sincerely,
Mr. H

